

REMARKS

An Office Action was mailed on January 7, 2004. Claims 1 – 6 are currently pending in the application. With this response, Applicants cancel claim 3 without prejudice or disclaimer, and amend claims 1, 2 and 4 - 6. No new matter is introduced.

AMENDMENT TO SPECIFICATION

Applicants amend the title of the invention to correct a minor typographical error.

REJECTION UNDER 35 U.S.C. §§ 102, 103

Claims 1 - 5 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,097,688 to Ichimura et al. Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Ichimura. Applicants cancel claim 3 without prejudice or disclaimer, amend claims 1, 2 and 4 - 6, and respectfully traverse these rejections.

In independent claims 1, 2, 4, 5 and 6, Applicant discloses a focus control apparatus, an optical disk playback system including the focus control apparatus, a focus control method and a program product storing a program executed by an optical disk playback apparatus for controlling the focus of an objective lens focusing light against an optical disk having a plurality of recorded layers. Significantly, the playback apparatus may be operated: a) to obtain an intermediate value from a maximum value and a minimum value of a focus error signal which corresponds to defocusing of the objective lens, and which is generated by a certain one of the recorded layers, and b) to turn on a focus servo which pulls in a focus of the objective lens, with a bias at which the focus error signal corresponds to the intermediate value, when a layer jump is made to another

recorded layer in order for the focus servo to perform an automatic adjustment of the focus bias for that layer prior to the start of data reproduction.

In this manner, the automatic adjustment of focus bias is more efficiently initiated after the objective lens has been initially positioned by a layer jump control circuit with respect to the jumped-to layer. In other words, Applicant's invention effectively provides a two-step process for adjusting focus bias for each layer. First, a pull-in position near the layer is efficiently reached by determining the intermediate value for the focus bias. Then, the focus servo operates to from the pull-in position to determine the focus bias for the layer, thereby enabling the focus servo to operate over a reduced distance to establish the focus bias for the layer.

Ichimura discloses an apparatus for recording information on an optical medium by laser means. The apparatus of Ichimura determines the presence of spherical aberration by evaluating the relative value of a focus error signal at a time coincident with the arrival of a peak value of an envelope signal (see, e.g., column 9, lines 24 – 53 of Ichimura). Based upon the value of the focus error signal (“-“, “0”, “+”), a gap between a two-group objective lens is adjusted to minimize spherical aberration characteristic of a particular optical medium (see, e.g., column 10, lines 20 – 60).

This procedure disclosed by Ichimura is quite different from the method disclosed by Applicant's claimed invention. In Applicant's claimed invention, an intermediate value is calculated from a maximum value and a minimum value of the focus error signal with respect to one layer of the optical medium, and the calculated value is then used to set a pull-in position for initially pulling in the focus of the lens before turning on a focus servo for automatically adjusting the focus bias for the layer (see, e.g., page 9, line 21 –

page 10, line 9, page 11, lines 10 – 20 and page 12, lines 1 – 14 of Applicant's specification). In this manner, automatic focus bias adjustment for a layer is efficiently carried out from a pull-in position near the focus position.

The Examiner suggests that, as Ichimura discloses multilayer optical disks, he necessarily discloses disk layer jumps (see, e.g., column 10, lines 56 – 60 of Ichimura). He also notes that Ichimura discloses a focus error signal taking an intermediate value between maximum and minimum values (see, e.g., column 10, lines 20 – 33). However, unlike Applicant's claimed invention, Ichimura does not teach or suggest calculating an intermediate value from minimum and maximum error signal values, and using the calculated intermediate value for setting a pull-in position to turn on a focus servo to execute an automatic adjustment of focus bias. Rather, Ichimura teaches measuring a focus error signal value at an envelope signal peak, evaluating the measured signal value, and adjusting a gap between two lens elements according to the measured value in order to reduce spherical aberration.

As Ichimura fails to teach or suggest Applicant's claimed invention, Applicant respectfully submits that claims 1, 2, 4, 5 and 6 fail are allowable.

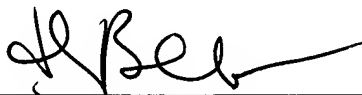
CONCLUSION

An earnest effort has been made to be fully responsive to the Examiner's objections. In view of the above amendments and remarks, it is believed that claims 1, 2 and 4 – 6 are in condition for allowance. Passage of this case to allowance is earnestly solicited. However, if for any reason the Examiner should consider this application not to

be in condition for allowance, he is respectfully requested to telephone the undersigned attorney at the number listed below prior to issuing a further Action.

Any fee due with this paper may be charged on Deposit Account 50-1290.

Respectfully submitted,



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